

Quality Assurance of Outcome-Based Professional Training in Chinese Medicine Programme: Current Status and Challenges

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Outlines

1. Background of Chinese Medicine and higher education of Chinese medicine in Hong Kong
2. The role of School of Chinese medicine and Bachelor of Chinese medicine programme
3. Outcome-Based Professional Training in Chinese Medicine Programme
4. Assessment and quality assurance

Medical system in the world

1. Medical system in the world
 - Western Medicine (WM)
 - Alternative and complementary medicine (ACM)
 - Traditional medicine
 - Traditional Chinese medicine (TCM) or Chinese Medicine (CM)
2. Medical system in Hong Kong
3. Medical system in China
 - WM
 - TCM or CM
 - Integrated Medicine in WM and TCM

Characteristics of Chinese Medicine

- The theory, diagnosis and treatment systems are different from those of Western Medicine
- Holistic concept (整体观念), Syndrome differentiation and treatment (辨证论治), integrated therapy (综合治疗, 复方治疗)
- Treatment methods →



Unique
treatment
methods



Plants,
animals
and
minerals

Acupuncture
and
moxibustion

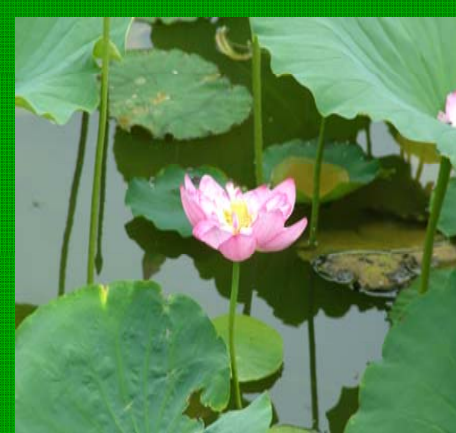
Tuina
(Chinese
massage)

Qigong

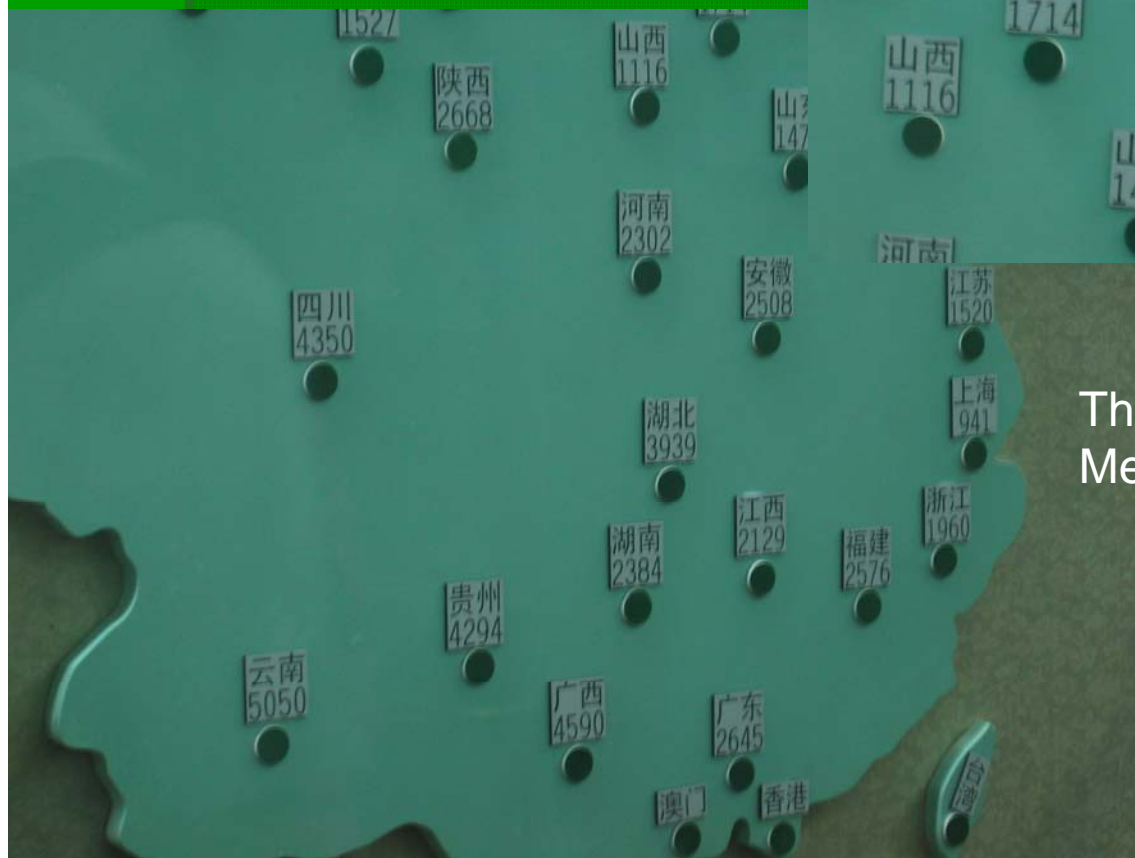


Amount of Medicinal herbs in pharmacopeias (Pharms) in some countries and WHO

• Chinese Pharms (2005)	551
• Japanes Pharms (2001)	165
• WHO (2004)	89
• USP (1990)	25

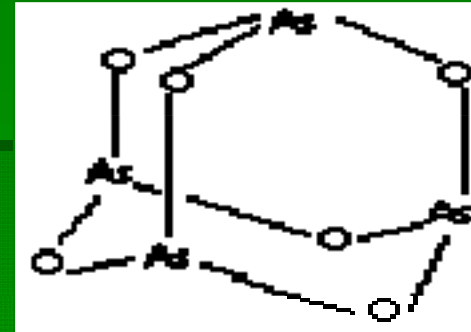


How many Chinese medicines
including botanic, animal and
mineral drugs in China?
12082 species

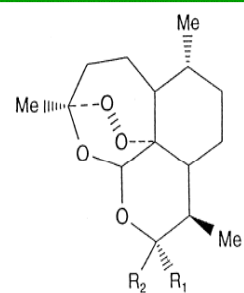
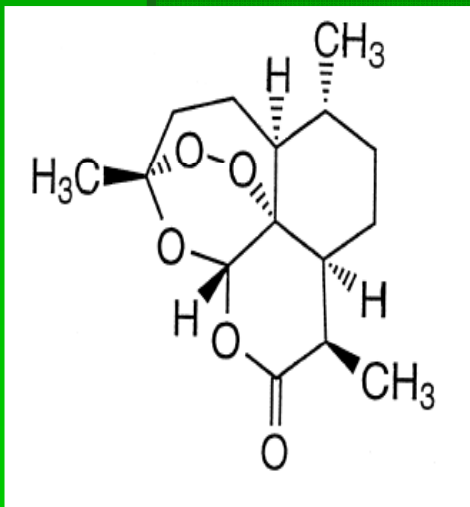


There are many mysteries in Chinese
Medicine for scientist to explore

Highlighted research achievements in Chinese Medicine

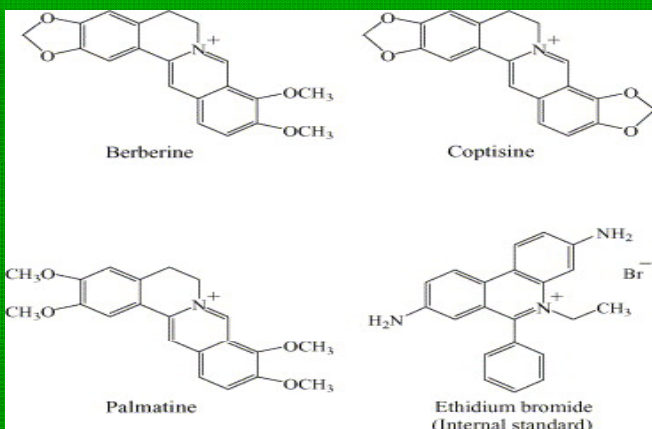


arsenic trioxide
(As₂O₃)



$R_1 = H, R_2 = OH$ Dihydroartemisinin
 $R_1 = H, R_2 = OMe$ Artemether
 $R_1 = H, R_2 = OEt$ Arteether
 $R_1 = H, R_2 = OCH_2C_6H_5CO_2H$ Artelinic acid
 $R_2 = H, R_1 = O_2CCH_2CH_2CO_2H$ Artesunic acid

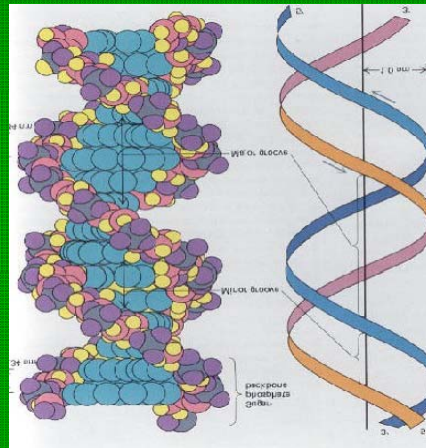
The compound qinghaosu (artemisinin), the active constituent of the herb Artemisia. Structure of Artemisinin and Structure of Artemisinin Derivatives



Structures of the Coptidis alkaloids.

Types of research in Chinese Medicine

- New technologies and new concepts (Molecular technology, Omic's technologies, informatics, nanotechnology, system biology, integrative medicine, individual medicine, translational medicine etc.) build up a good platform for the following studies in Chinese Medicine:
 1. New drug derived from CM for WM: antimalarial, anticancer and lowering cholesterol drugs etc. were approved by top journals, FDA and WHO.
 2. ACM provides alternative and complementary treatments from CM to WM
 3. Evidence research for Science and art of CM



The History of Chinese medicine Education in Hong Kong

- Before the 90's: Taught in the form of unofficial education
- In the early 90's: HKU started to provide Chinese Medicine education through HKUSPACE, which was a milestone for formal Chinese Medicine education. It provided a diversified platform that fostered professionalism, popularity and lifelong learning of Chinese medicine in Hong Kong.
- By the end of the 90's and the early 2000: Chinese medicine education provided by the government has already become the mainstream for nurturing Chinese medicine professionals. The Hong Kong Chinese Medicine Council (HKCMC) was established and the Hong Kong Baptist University (HKBU), Chinese University of Hong Kong (CUHK) and the University of Hong Kong (HKU) started to provide full-time Chinese Medicine undergraduate programmes successively.

Outlines

1. Development of Chinese Medicine and higher education of Chinese medicine in Hong Kong
2. The role of School of Chinese medicine and Bachelor of Chinese medicine programme
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4. Assessment and quality assurance

The role of School of Chinese medicine in HKU education

- Mainly run UGC funded Bachelor of Chinese Medicine program
- Provide introduction course for MBBS, BPH, BNur in LKS Faculty of Medicine or Common Core Course (CCC) related to Chinese Medicine in HKU
- Life long education
- Localization and internationalization of CM education
- Build up reputation for world class Chinese medicine program via education, CM research and CM clinical service. Prof. Lee SP hope our school should be made "The new face of Traditional Chinese Medicine and a new phase in history".

Privilege trilingual language for Chinese medicine education in HKU

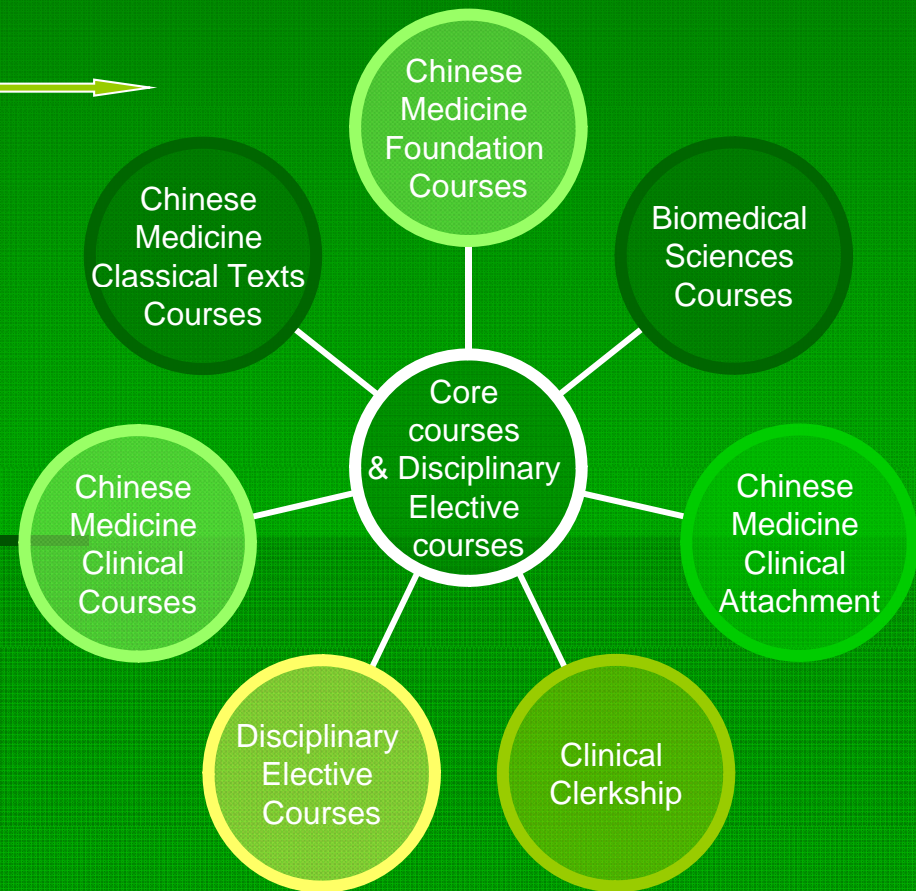
- HKU is a westernized and international university with English as its teaching medium. However, our school is privileged to use trilingual language for the following purposes:
 1. Chinese: used for Chinese medicine subjects, it gives original taste in literature of Chinese medicine and Chinese culture over thousand years in China.
 2. Cantonese: used for teaching and clinical consultation for Chinese medicine, it is related to Chinese medicine localization.
 3. English: used for broadening courses (or CCC), life science and western medicine subjects, it provides original taste in knowledge of culture, art, science and medicine in the world.

BChinMed Programme Structure (Three modules and core courses)

1. Core courses and
Disciplinary Elective
courses


2. Language Enhancement
courses

3. Common Core courses



Overview of the Curriculum (before 2012)

2010 Curriculum								Credit units
Yr 5	CM Practica and Clinical Clerkship (200 credits)							200
Yr 4	CM Clinical Studies (36 credits)	CM Foundation Studies (6 credits)	CM Classical Texts (24 credits)	Biomedical Sciences (10 credits)	Non-Core Courses (6 credits)	CM Practica and Clinical Clerkship (6 credits)		88
Yr 3	CM Clinical Studies (51 credits)	CM Classical Texts (9 credits)		Biomedical Sciences (14 credits)	Non-Core Courses (3 credits)	CM Practica and Clinical Clerkship (6 credits)		83
Yr 2	CCC (6 credits)	English (3 credits)	CM Foundation Studies (21 credits)	CM Classical Texts (6 credits)	Biomedical Sciences (27 credits)	Non-Core Courses (6 credits)	CM Practica and Clinical Clerkship (6 credits)	75
Yr 1	CCC (6 credits)	English (3 credits)	Chinese (3 credits)	CM Foundation Studies (36 credits)	Biomedical Sciences (21 credits)	Non-Core Courses (3 credits)	CM Practica and Clinical Clerkship (3 credits)	75
TOTAL CREDIT UNITS								521

-  = CCC (12 credits) and language courses (9 credits)
-  = Core courses (261 credits)
-  = Non-core (elective) courses (18 credits)
-  = Practica and clinical clerkship (221 credits)

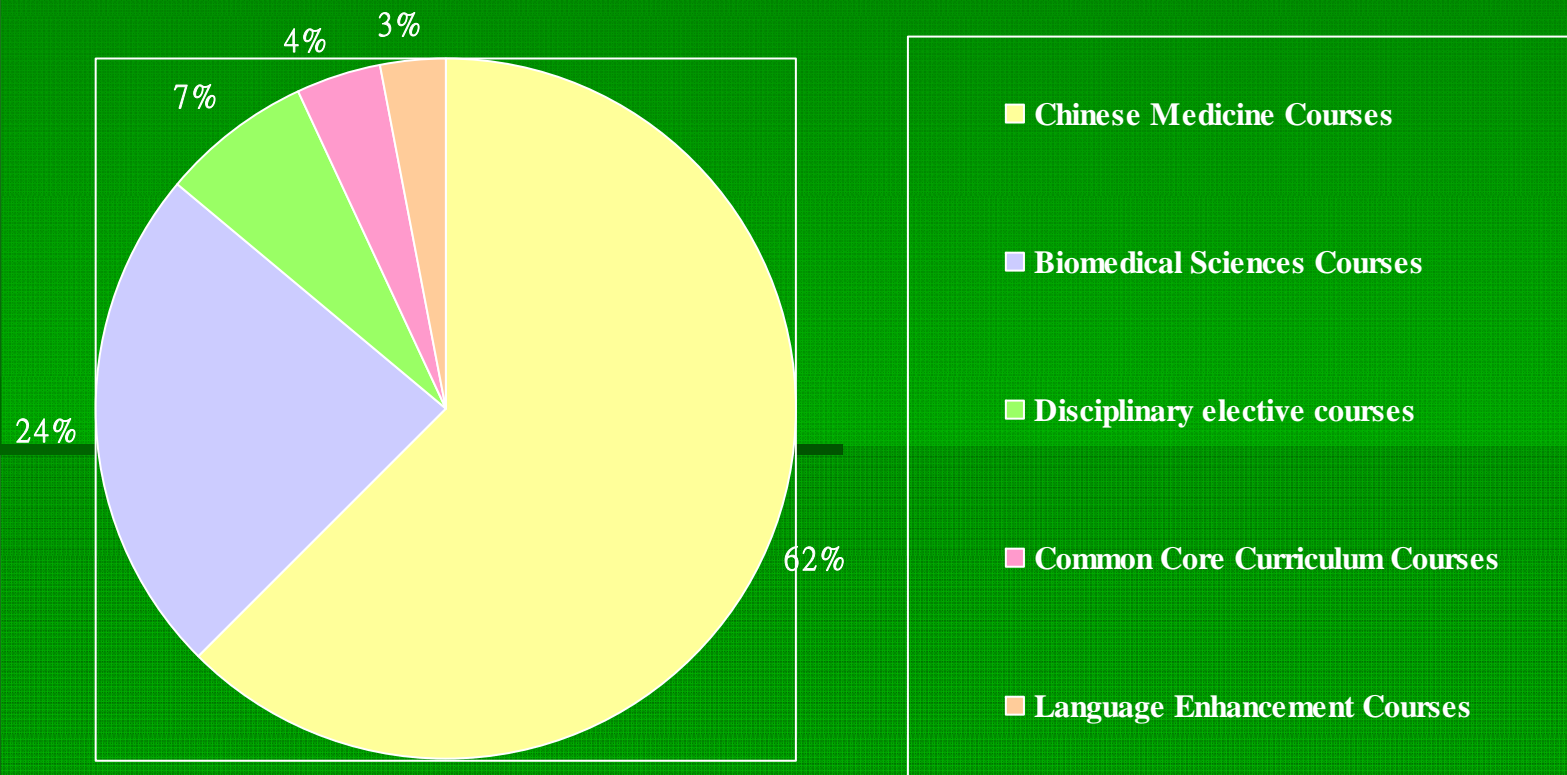
Overview of the Curriculum (after 2012)

2012 Curriculum							TOTAL credit units (by year)
Yr 6	CM Practica and Clinical Clerkship (200 credits)						200
Yr 5	CM Foundation Studies (6 credits)	CM Classical Texts (24 credits)	CM Clinical Studies (27 credits)	Biomedical Sciences (10 credits)	Non-Core Courses (6 credits)		73
Yr 4	CM Classical Texts (9 credits)		CM Clinical Studies (57 credits)	Biomedical Sciences (14 credits)	Non-Core Courses (3 credits)	CM Practica and Clinical Clerkship (6 credits)	89
Yr 3	CM Foundation Studies (21 credits)	CM Classical Texts (6 credits)	CM Clinical Studies (3 credits)	Biomedical Sciences (27 credits)	Non-Core Courses (3 credits)	CM Practica and Clinical Clerkship (6 credits)	66
Yr 2	CCC (12 credits)	English (6 credits)	CM Foundation Studies (15 credits)	Biomedical Sciences (21 credits)	Non-Core Courses (6 credits)	CM Practica and Clinical Clerkship (6 credits)	66
Yr 1	CCC (24 credits)	English (6 credits)	Chinese (6 credits)	CM Foundation Studies (21 credits)		CM Practica and Clinical Clerkship (3 credits)	60
TOTAL CREDIT UNITS							554

-  = CCC (36 credits) and language courses (18 credits)
-  = Core courses (261 credits)
-  = Non-core (elective) courses (18 credits)
-  = Practica and clinical clerkship (221 credits)

BChinMed Programme Structure

Credit Distribution



Outlines

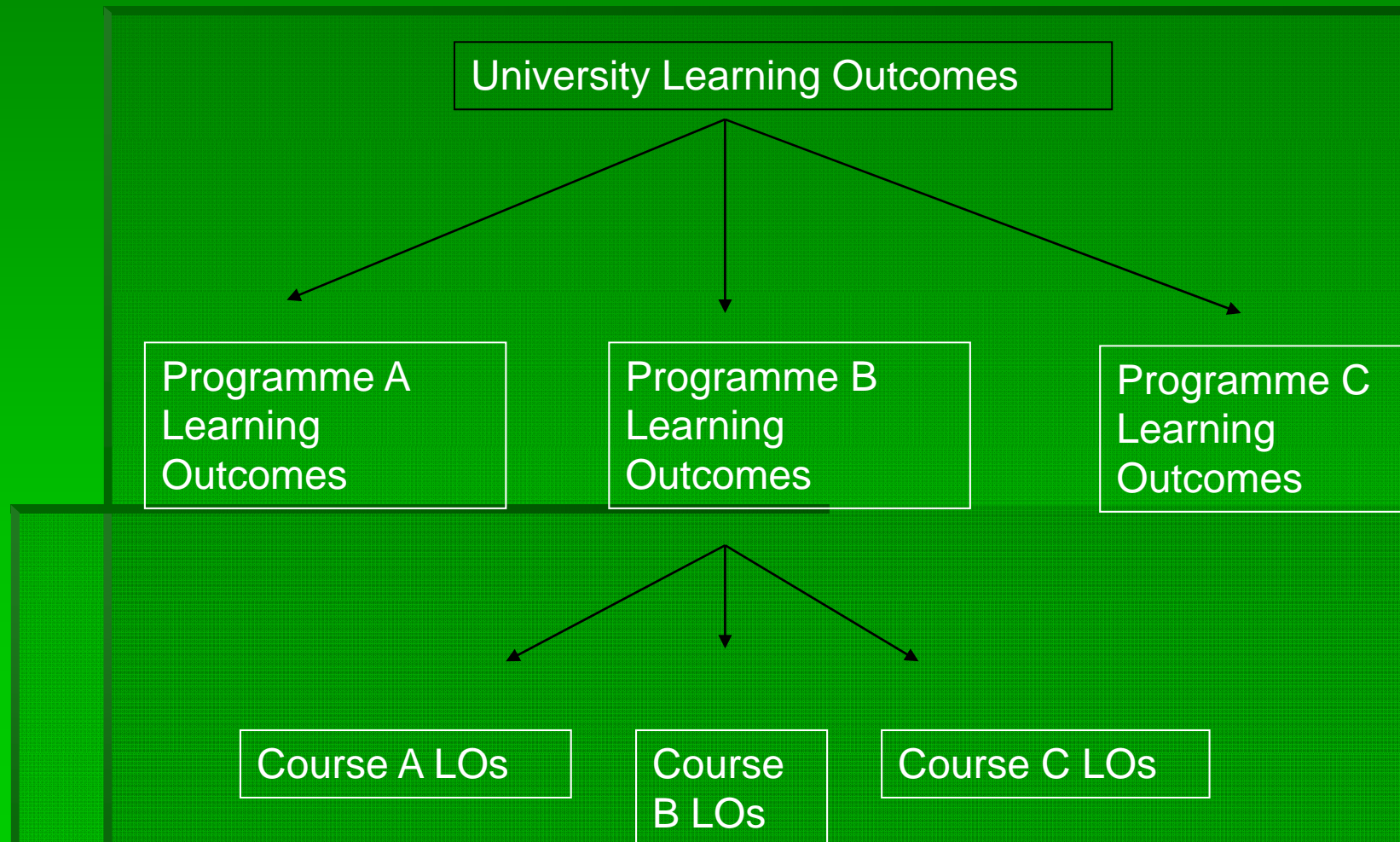
1. Background of Chinese Medicine and higher education of Chinese medicine in Hong Kong
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3-3-4 Education Reform and Outcome-Based Professional Training (OBPT) in Chinese Medicine Programme (CMP)

- 3-3-4 educational reform is a policy of Hong Kong government, which aims to begin in 2012. From the existing educational system transform to a popular educational model. 3-3-6 (6-year for Chinese Medicine programme).
- The University of Hong Kong (HKU) 3-3-4 education reform: has started its 3-3-4 educational reform and outcome-based approaches to student learning (OBASL) as its characteristics. OBASL is to transform teacher-centered teaching in the past to student-centered learning by introducing a series of new teaching activities. In Chinese Medicine, OBPT is one of OBASL.
- Opportunity and Challenges: The implementation and outlook of the ways and strategies of undergraduate training in Chinese medicine in HKU's OBASL. We introduced and performed diversified assessments for OBASL of Chinese medicine program among which Problem Based Learning (PBL) and observed structured clinical examination (OSCE) are new methods for us to adopt.



Allied Chinese Medicine Programme (CMP) with HKU's 6 OBASL aims



Current status of Outcome-Based Professional Training (OBPT) in Chinese Medicine Programme (CMP)

- In the past 8 years, the School of Chinese Medicine, HKU, has been working on a comprehensive 5-year Chinese medicine curriculum by taking the practical situation of Chinese medicine programmes in Hong Kong and Mainland China as reference. The programme will be transformed to a 6-year programme from the year 2012. OBASL (or OBPT) started in 2008 and will be fully implemented in 2012. Learning outcomes of CMP are required to be:
 1. Aligning with HKU aims & learning outcomes,
 2. Formating Syllabus, credits system and course outlines of BChinMed by HKU approach of outcome based leaning and teaching.
 3. Written at 2 levels: program and course
 4. Integrating traditional and new methods for OBPT in CMP
 5. Conducting several workshops for our teachers to push OBPT in CMP

a. University Aims for OBASL

University Aims

<i>Aim 1</i>	To enable students to develop capabilities in pursuit of academic/professional excellence, critical intellectual inquiry and life-long learning
<i>Aim 2</i>	To enable students to develop capabilities in tackling novel situations and ill-defined problems
<i>Aim 3</i>	To enable students to develop capabilities in critical self-reflection and greater understanding of others
<i>Aim 4</i>	To enable students to develop capabilities in intercultural communication, multi-cultural understanding and global citizenship
<i>Aim 5</i>	To enable students to develop capabilities in collaboration and communication
<i>Aim 6</i>	To enable students to develop capabilities in leadership and advocacy for the improvement of the human condition

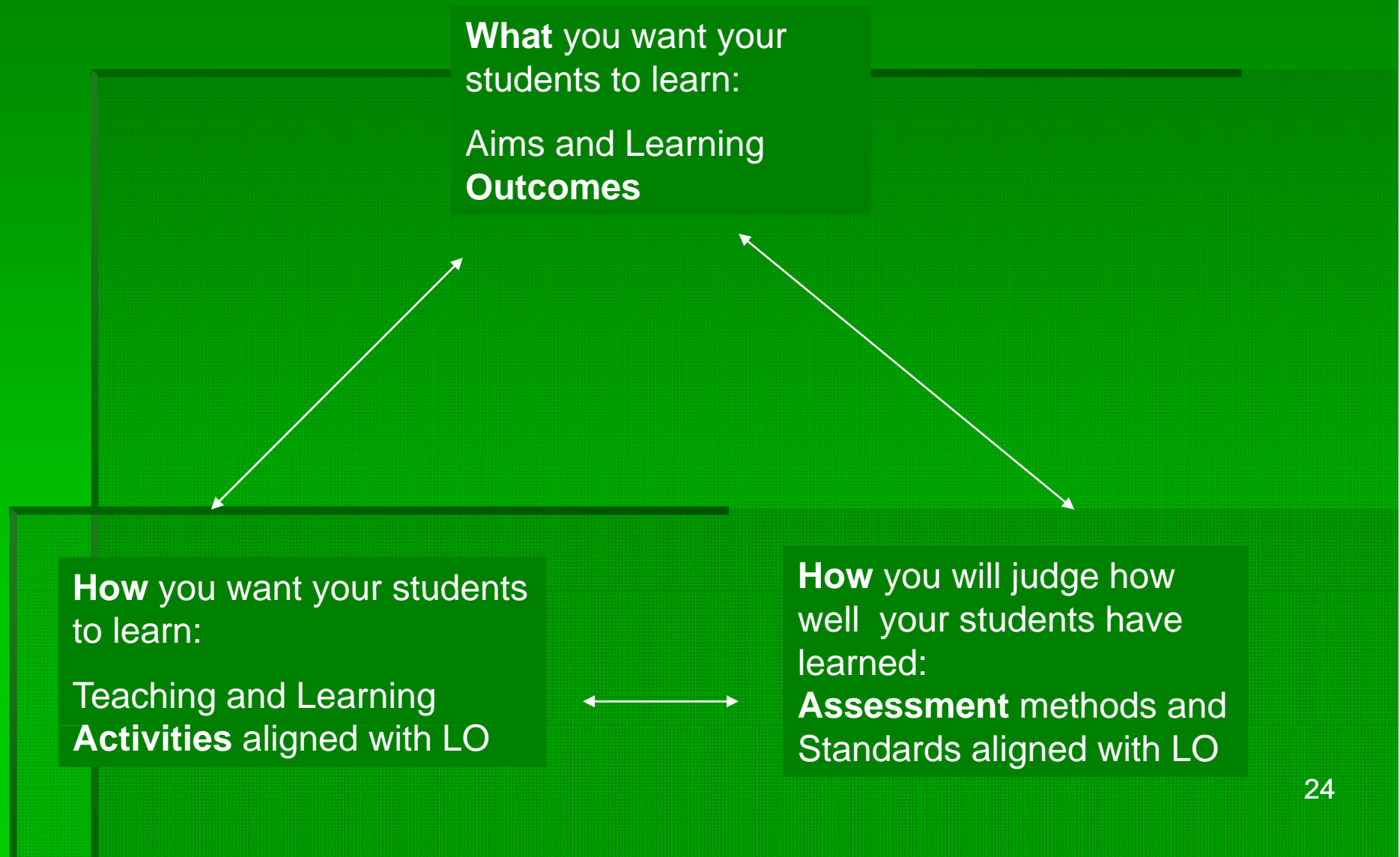
b. BChinMed Programme Learning Outcomes

1.	Critical intellectual inquiry and life-long learning <i>Students should be able to:</i>
A	understand clinical practice and medical management of Chinese Medicine comprehensively, identify the problem and make appropriate criticism
B	investigate medical and clinical problems in Chinese Medicine and to establish suitable management plan
C	obtain actively information of clinical treatment and research in Chinese Medicine; keep pace with technology advancement and explore new markets
2	Tackling novel situations and ill-defined problems <i>Students should be able to:</i>
A	inherit tradition of Chinese Medicine; make use of the concepts in Chinese Medicine studies to differentiate and solve complicated clinical problems
B	combine different scientific knowledge; explore and improve clinical diagnosis, treatment and research of Chinese Medicine
3	Critical self-reflection and greater understanding of others <i>Students should be able to:</i>
A	evaluate objectively personal ability and limitation and to make appropriate decision for patients
B	analyse a clinical scenario from multiple perspectives, including that of the patient, the patient's family, and colleagues in the professional team

b. BChinMed Programme Learning Outcomes (continued)

4	Intercultural communication, multi-cultural understanding and global citizenship <i>Students should be able to:</i>
A	apply the philosophy and the holistic approach of TCM in clinical practices
B	understand the promotion and application of Chinese Medicine and other complementary medical science in developed and less developed countries, as well as their positive influence on human health
C	understand the influence of cultural difference between East and West on the theoretical systems of Chinese and Western medicine, as well as the comparative advantage of Western and Chinese Medicine respectively
5	Collaboration and communication <i>Students should be able to:</i>
A	demonstrate the ability to communicate effectively with patients and their families, staff members, peers and other health care professionals orally and in writing
B	respect the roles and contributions of other members of the team
6	Leadership and advocacy for the improvement of the human condition <i>Students should be able to:</i>
A	recognize research as a valuable tool for the improvement of human condition
B	participate in the enhancement, explanation, application and promotion of treatment and knowledge of prevention in Chinese Medicine
C	initiate or participate in community projects for the betterment of health

Model of OBASL at course level



BChinMed courses learning outcomes

Corresponding objectives	Learning outcomes	Teaching and learning objectives	Assessments
1,2, 4A, 5A, 6A,6B	Grasp the definitions of Chinese medicines, Chinese Materia Medica and “Studies of herbs” (本草學) as well as the fundamental theoretical knowledge of “Xin wei”(性味), “Gui Jin”(歸經), “Ascending and Descending”(升降浮沉), toxicity, purpose of manufacturing (炮製目的), “combination relationship”(配伍關係) and application taboo. Students are also expected to understand the development of Chinese Materia Medica, major processing methods, dosage and application, as well as the source, place of origin and methods of herbal collection and other processing methods.	Lectures discussion Tutorial Multi-media teaching material Field visits (Chinese medicine markets, GMP yinpien factory, chinese medicine garden)	Written examination Field trip Learning experience Learning attitude
1,2,5A,6A,6B	Students are expected to grasp the categorization of 214 common Chinese medicines, their characteristics, effectiveness, “Targeted disease”(主治), “Pei Wu”(配伍) and some particular usages and to understand its source, significance of processing, dosage, usage and application precautions. Students should also have better understanding of the categorization, effectiveness, main application, special usage and application precaution of 104 common Chinese medicines. They should also understand the effectiveness, special usage and precautions of 110 comparatively common medicines. The remaining Chinese medicines are just for reference.	lectures Problem-based learning, case studies Group discussion Group presentation Medicine and yinpien identification in specimen room and dispensary	Written examination Field trip Learning experience Learning attitude Group presentation Medicine identification test PBL
1A,2A,5A, 6A,6B	Students should be able to identify 31 strong Chinese medicines and commonly used Chinese medicines in the Hong Kong region or 60 confusing items inside the attachment 1 of the “Regulations of Chinese Medicines”	Group discussion on Chinese medicine toxicity Chinese medicine and yinpien identification in specimen room and dispensary	Medicine identification test, Learning attitude
1,6B	Students Should be able to grasp common skills and knowledge for “Yin Pian”(飲片)	Chinese medicine and yinpien identification in specimen room and dispensary	Medicine identification test, Learning attitude

The methods and implementation of OBPT for students

- The implementation of OBASL (or OBPT) mainly relies on teachers' work in their own courses to train up students' abilities. For the 5-year and 6-year Chinese medicine education, the methods that have been (and will be) implemented include: traditional and new methods below.

Traditional methods

1. Early and more clinical practices

To let student familiarize earlier with Chinese medicine clinical practices, as well as the market for Chinese medicine services and the diagnosis and treatment of common diseases in the region. In-session practicum and summer practicum have been arranged for students starting from year 1. Practica are arranged in the 6 Clinical Centres for teaching and research, which are operated by the School and co-operated with public hospitals.



All teachers have to involve in classroom and clinical teaching. Case studies will be used in lessons to link theories with real practices. Objectives, assessment standard and credit units are set according to the natures of different courses. Except clinical practicum, we are also working on improving our clinical skills centers and let students have more opportunity for simulated training.



2. Integration of Medicine and Pharmacy

- Chinese medicine practitioners in Hong Kong usually practice individually. They provide medical services and sell Chinese medicines at the same time. Therefore, except the lectures, we take students to visit the specimen room. We also organize field trips and dispensary practicum for the students during summer, so that they can grasp the knowledge of Chinese medicine through practice.



3. Experiential Learning

- Flied trip to Yunnan and Sichuan provinces in China
- Experiment sessions for some courses
- Student exchange programme with Shanghai University of TCM



D. Small Interest Groups

Students who are happy and willing to learn more always excel others who are not.



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Assessment and quality assurance

- Assessments: Traditionally, assessments for Chinese medicine mainly depend on paper examination. To embrace the theme of 3-3-4 reform and to push Chinese medicine program into a world-class program in HKU, we introduced and performed diversified assessments for OBASL (or OBPT) of Chinese medicine program because assessment has a profound effect on student learning: what student learn, and the way student learn it, is driven by how student are going to be assessed. Among the diversified assessments, PBL and OSCE can be used for both teaching and learning purpose and PBL and OSCE are new forms for Chinese medicine program.
- Quality assurance: integrated international, national and HKU standards to monitor Chinese medicine Programme.

Assessment workshop

- Dr. Diane Salter, CETL of HKU, was invited to conduct a training session on assessment methods. This also helps our School get familiarized with the University standard and culture



Action Item: Student Focus Group Interview and HKUSLEQ

- address the issue of insufficient feedback on assessments

Issues addressed at the Staff Assessment Workshop

- learning to design suitable teaching materials
- exposure on a variety of assessment methods
- learning to deliver appropriate assessments

Outcomes of the Staff Assessment Workshop

- review and develop better teaching materials
- adapt new assessment methods
- review and design more appropriate assessments

- After the workshops, our teachers learnt more about the following issues:
 1. give more attention to student feedback and make course enhancements accordingly.
 2. Consider using various assessment methods and active learning for students
 3. Recognized that the Problem-Based Learning (PBL) and Objective Structured Clinical Examination (OSCE) approaches for clinical learning and assessments are important aspects for medical education.

Workshops for PBL and OSCE

- In order to get systematic knowledge in PBL and OSCE, we conducted workshops by inviting Professor Emeritus Kwan David, McMaster University, Canada, and Associate Professor Diane Salter, Center for the enhancement of teaching and learning, the University of Hong Kong.



PBL workshop

Date	March 2, 2009 (Monday)	March 3, 2009 (Tuesday)	March 4, 2009 (Wednesday)	March 5, 2009 (Thursday)
Topic	What, why and how	Writing good problems is the issue	The multiplicity of assessment in PBL	The outcome studies on PBL
09:15 - 09:30	Opening remarks	-	-	-
09:30 – 11:00	Lecture 1: What and why: the origin and practice of PBL	Lecture 2: The “problems”: platform for learning and Elements in its design	Lecture 3: The multiplicity of evaluation in PBL and taking the right students	Lecture 4 : How do people fare with PBL? -Outcome
11:00 – 11:30	Q & A / Tea Break			
11:00 – 12:00	Hands-on demonstration of PBL tutorials	Hands-on learning to write PBL problems	Observation of the 2nd PBL tutorial	Lecture 5: PBL and medical professionalism
12:00 – 12:30				Discussion / Q and A
12:30 – 14:00	Lunch Break			
14:00 – 15:00	Group Reports	Group Reports	Group Reports	14:00-16:00 <u>In-house Discussion and Strategic Planning</u>
15:00 – 15:30	Discussion/ Tea Break	Discussion/ Tea Break	Discussion/ Tea Break	
15:30 - 17:00	<u>In-house Discussion :</u> Chinese Medicine Foundation Studies	<u>In-house Discussion :</u> Chinese Medicine Classical Text	<u>In-house Discussion :</u> Chinese Medicine Clinical Studies	

元素

Elements in PBL

Clinically Oriented Problem Sets

Students and Mentors

Tutor/Co-tutor

Resource Persons

Space and Library

Informatics



◆ What should students be learning in Chinese Medicine school?

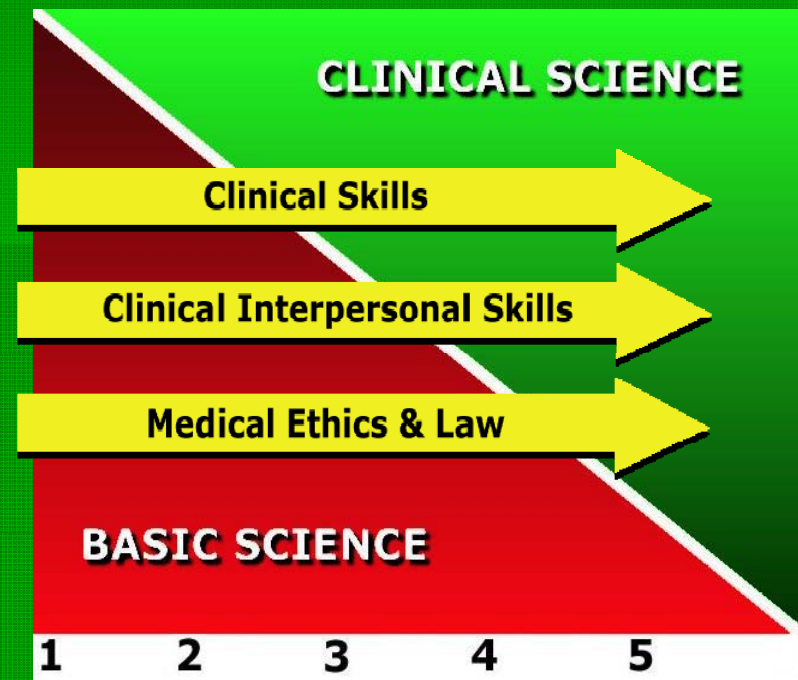


PBL

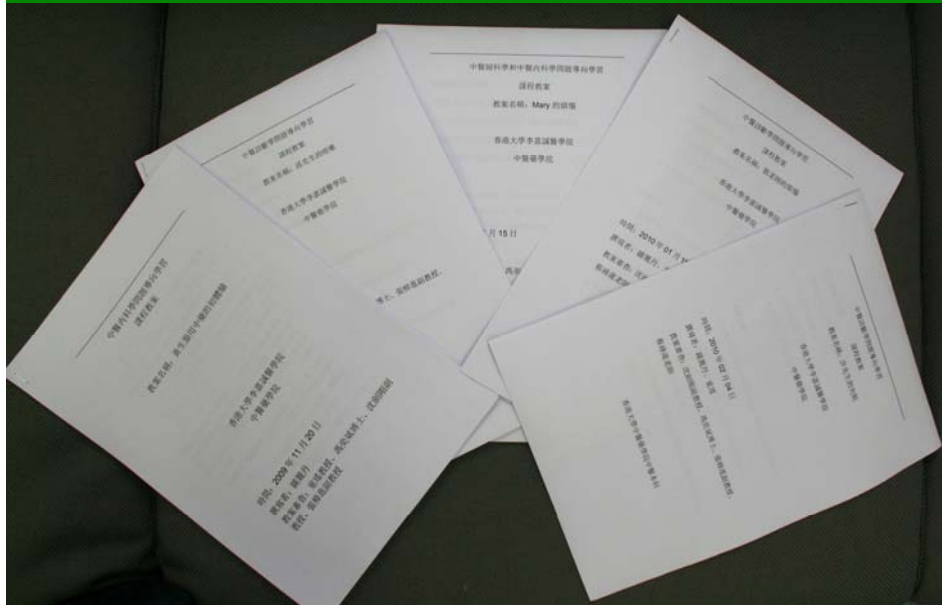
	Student	CM Physician	CM Research
Problem nature Population & communities Exploration & resolution General & specialties Relevance	Professionally relevant triggers	Patient problems	Scientific Research problems
Behavior: Communication, code of conduct, Dedication, team-work, compassion, Reflection	切問而近思矣 當仁不讓於師	醫不遠人 人爲醫而遠人 不可以爲醫	格物以致知
Living experience: Knowledge & skills application Scope & depth Knowing your limit & strength Self-directed & life-long learning			

- This method should be implemented together with the curriculum reform. Our School has divided the related courses into 5 categories: Chinese Medicine Foundation Studies, Chinese Medicine Prescription and Pharmacology, Chinese medicine clinical studies (Chinese Internal Medicine, Gynecology of Chinese Medicine, Surgery of Chinese Medicine, Pediatrics of Chinese Medicine), Traumatology & Orthopaedics of Chinese Medicine , acupuncture and Tui-na of Chinese Medicine and Modern Medical science. The 5 themes are shown below:

- **Human Biology in Health and Disease**
- **Relationship of TCM and western medicine**
- **Doctors and Patients**
- **Medicine and Society**
- **Professional Development**



PBL cases and Group dynamics



The case of “The unfortunate events of the obese girl” for PBL were divided into 3 scenes, which simulate the natural evolution of Nephropathy caused by Aristolochic acid. The pathogenic materials and the pathogens are tracked by taking her medical history and by conducting experiments.

Communication between her doctor and internships gradually comes up with the answer to the causes and solution to the problem. Similarity and differences of diagnosis and treatment between Chinese and western medicine have been explored from the angle of disease-diagnosis and syndrome- diagnosis; They also understand more about the epidemiology of this disease (population) and the individual differences (genetic and epigenetic diseases).

Students will be able to understand more about how to treat diseases from herbal source and to apply and choose the right herbs to maximize its effect and avoid possible poisoning and side-effects.



B. OSCE（客观结构化临床考试）

Introduced by Harden (1988)

Applied widely in medical science

3 characteristics:

- OSCE focuses on student competence:
- *OSCE is structured*
- *OSCE is objective*

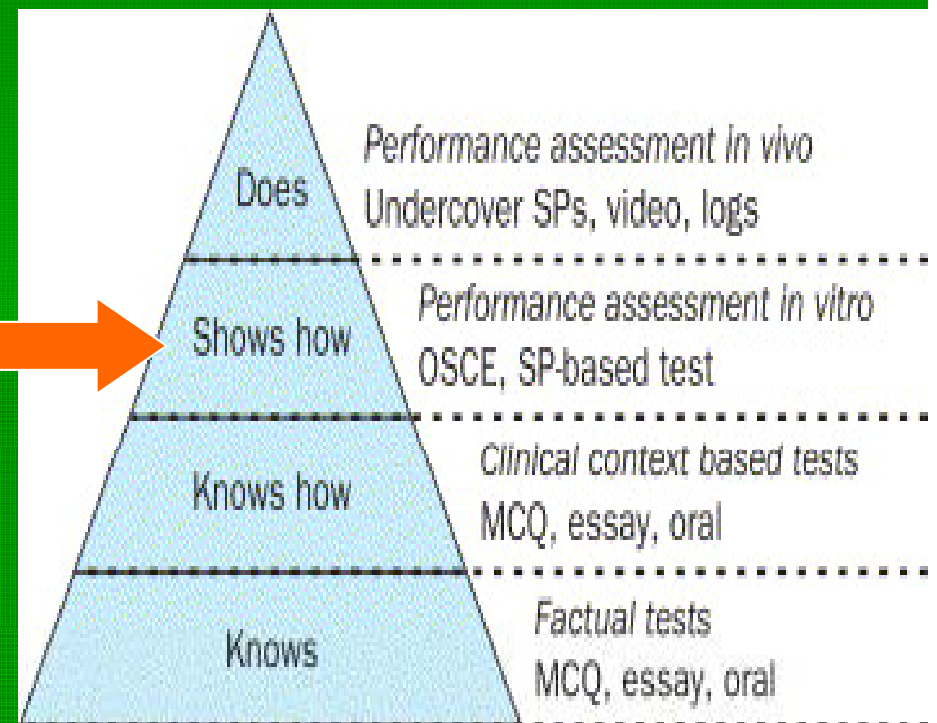
OSCE in Miller's (1990) pyramid for Chinese medicine education

Level 4: Skills and attitudes

Level 3: Performance, products

Level 2: Application of knowledge

Level 1: Knowledge



Existing Quality Assurance

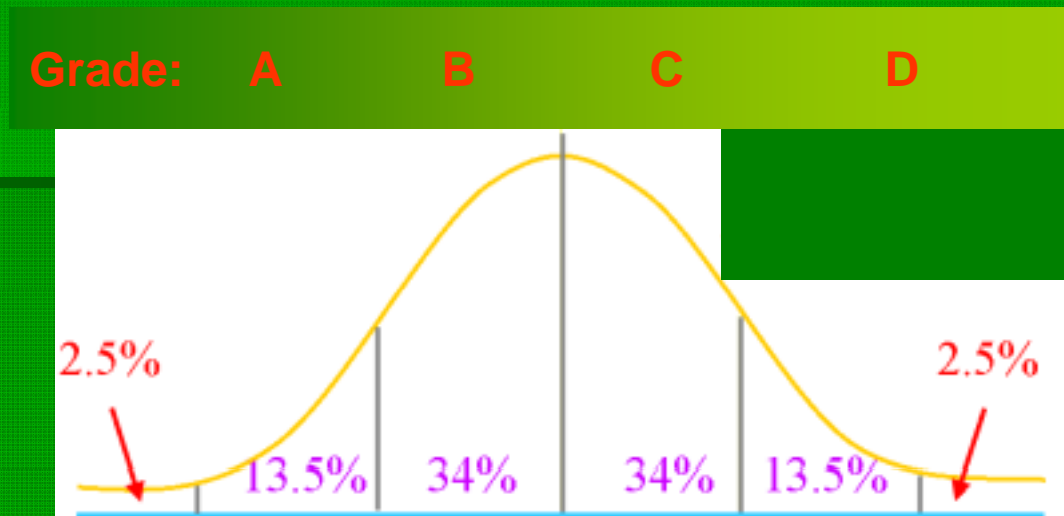
- HKU has established a system of quality control and there is standardized evaluation for teachers and students. International conference related to quality teaching are also provided by the University or the Faculty of Medicine every year. Teachers and students are invited to evaluate the teaching environment, teachers and the programmes.
- 1. HKU Student Learning Experience Questionnaire: HKUSLEQ
- 2. Student Evaluation of Teaching: SET
- 3. LKS Faculty of Medicine is also working on a peer-review assessment method and standard.

Quality Assurance for Assessment

- Teaching and learning should involve a reasonable and fair assessment method. What students learn depend on what teachers will examine them. A comprehensive and systematic assessment method guarantees the development of Chinese medicine professionals.
- 1. Diversified assessment system: a comprehensive system including PBL and OSCE
- 2. Internal and external examiners for examination papers: The Shanghai University of TCM. (Profs Shi Jian-Rong, Li Qi-Zhong and Hu Hong-Yi) , as well as other sister institutions
- 3. Registration examinations in Hong Kong and Mainland China: 5-year programme (transforms to 6-year programme after 2012)

Standard for assessments and score distribution

- Diversified assessments
- Continue assessments
- Standard Normal Distribution of Examination Grade



Student Evaluation Result: HKUSLEQ and SET

HKUSLEQ in CMP: students satisfied with achievement of education outcomes, teaching & learning environments and learning approaches got higher scores in 2008-2009 compared with 2007-2008 academic year.

SET: Academic Year	Course Effectiveness	Teacher Effectiveness
2008/2009 2nd Semester	59.9	57.0
2009/2010 2nd Semester	70.6	62.2

QA supported by Research and research output

- Enhanced the excellence in teaching development projects supported by Teaching Development Teaching Development Grants (TDGs)
 - Enhanced Evidence-Based Medicine and transformed knowledge in Chinese medicine via clinical and basic scientific research supported by HK government grants and HKU's grants.
 - Over 100 original Chinese Medicine research papers in SCI journals.
 - Over 10 books on teaching and learning in Chinese
- The above work will continue...



Challenge in the future

- Enhancement and assurance of teaching and learning quality
- Promotion of innovation in curriculum design and pedagogy
- PBL focuses on unknown knowledge and skills which students need to master, while OSCE, same as other traditional examinations, put emphasis on known basic and clinical knowledge and skills which should be learnt and examined in practice and paper test with diversified levels.

Summary

- Hong Kong is a metropolitan city where East meets West. Hong Kong is a gateway of China to the west and the rest of the world. The Chinese medicine education in HKU has stepped out to train up Chinese medicine professionals and to foster national and international exchanges in the field of Chinese medicine. Quality Assurance is an integrated and complicated issues. To make Chinese medicine program as a world-class program in HKU, we have done and will do the following work for Quality Assurance of Outcome-Based Professional Training (OBPT) in Chinese Medicine Programme (CMP):
 1. curriculum design and pedagogy under 3-3-6 educational reform
 2. programme level OBASL be aligned with university level OBASL.
 3. diversified assessments
 4. Include PBL and OSCE as new methods in teaching and learning activities
 5. Quality assurance (QA) should monitor the implementation and assessment of OBPT and continuously improve QA itself.
 6. Improve quality of teachers and students.

Thank you

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